Robin Generator

Model RGD551, RGD1101

Technical Data & Overhaul Instructions

SERVICE MANUAL

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1. SPECIFICATIONS

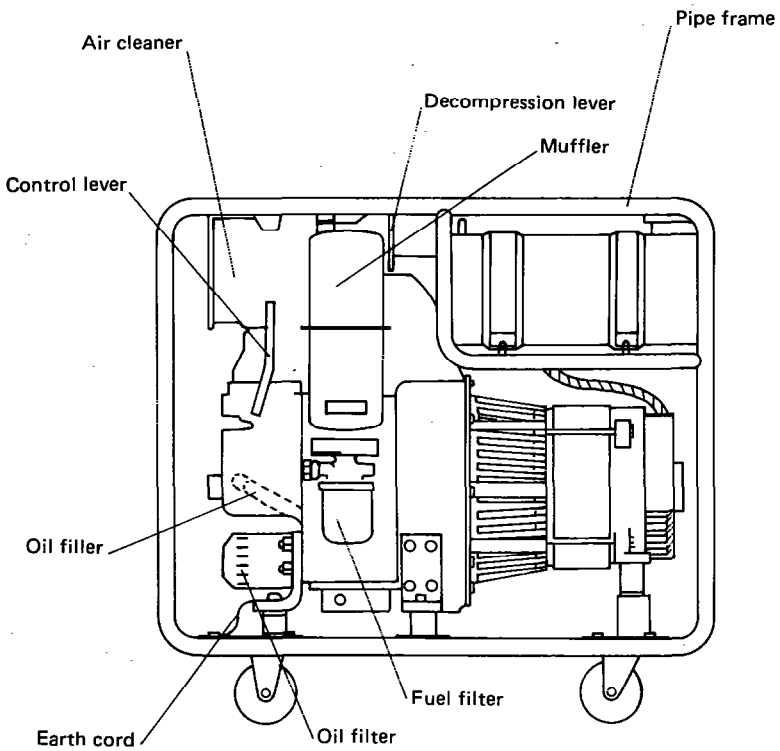
	Model	RGD551											
Generator	Type	Self exciting, 2 pole											
		3 phase, 4 wires					Single phase, 2 wires					Single phase, 4 wires	
	Frequency	50Hz			60Hz		50Hz			60Hz		50Hz	60Hz
	Output Max.	5500VA					4500W						
	Output Rated	5000VA					4000W						
	Voltage (V)	220/380	230/400	240/415	120/208	127/220	110	220	230	240	110	120	110/220
	Current (A)	7.6	7.2	7.0	13.9	13.1	36.4	18.2	17.4	16.7	36.4	33.3	36.4/18.2
	Rated Revolution (rpm)	3000			3600		3000				3600		3000 / 3600
	Power Factor	0.8					1.0						
Engine	Type	Air-cooled, 4-cycle, Single-cylinder Diesel Engine											
	Model	DY40-A											
	Piston Displacement (cu.in)	402cc (24.53)											
	Maximum Horsepower	8 PS											
	Fuel	Diesel Oil											
	Fuel Tank Capacity (U.S. gal.)	15ℓ (3.96)											
	Starting System	Starting Motor											
	Terminal	Output Terminal 4					Output Terminal 2						Output Terminal 4
		Output Socket 2					Output Socket 2						Output Socket 2
	Voltage Regulator	CT type Voltage fluctuation ±5%					AVR type Voltage fluctuation ±5%						
	Circuit Protection	Breaker 3P 7.3A			Breaker 3P 15A		Breaker 1P 37A		Breaker 1P 18A		Breaker 1P 37A	Breaker 1P 35A	Breaker 2P 18A
	Dry Weight (lbs)	140kg (309)											
	Dimensions LxWxH(inch)	811x598x773mm(31.9x23.5x30.4)											

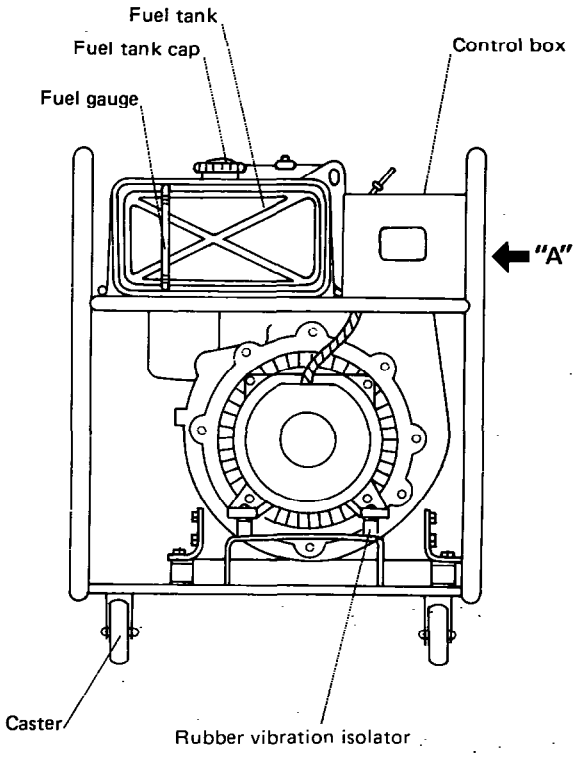
Model		RGD1101												
Generator	Type	Self exciting, 2 pole												
		3 phase, 4 wires					Single phase, 2 wires						Single phase, 4 wires	
	Frequency	50Hz			60Hz		50Hz			60Hz			50Hz	60Hz
	Output Max.	11000VA					9000W							
	Output Rated	10000VA					8000W							
	Voltage (V)	220/380	230/400	240/415	120/208	127/220	110	220	230	240	110	120	110/220	
	Current (A)	15.2	14.4	13.9	27.8	26.2	72.7	36.4	34.8	33.3	72.7	66.7	72.7/36.4	
	Rated Revolution (rpm)	3000			3600		3000				3600		3000	3600
	Power Factor	0.8					1.0							
Engine	Type	Air-cooled, 4-cycle, 2-cylinder Diesel Engine												
	Model	DY80-2A												
	Piston Displacement (cu.in)	804cc (49.06)												
	Maximum Horsepower	16PS/3000rpm												
	Fuel	Diesel Oil												
	Fuel Tank Capacity (U.S. gal.)	24ℓ (6.34)												
	Starting System	Starting Motor												
Terminal		Output Terminal 4					Output Terminal 2						Output Terminal 4	
		Output Socket 2					Output Socket 2						Output Socket 2	
Voltage Regulator		CT type Voltage fluctuation ±5%					AVR type Voltage fluctuation ±5%							
Circuit Protection		Breaker 3P 16A	Breaker 3P 15A		Breaker 3P 30A		Breaker 1P 75A	Breaker 1P 37A	Breaker 1P 35A		Breaker 1P 75A	Breaker 1P 70A	Breaker 2P 37A	
Dry Weight (lbs)		220kg (485)												
Dimensions LxWxH(inch)		961x650x872mm (37.8x25.4x34.3)												

2. EXTERNAL VIEWS

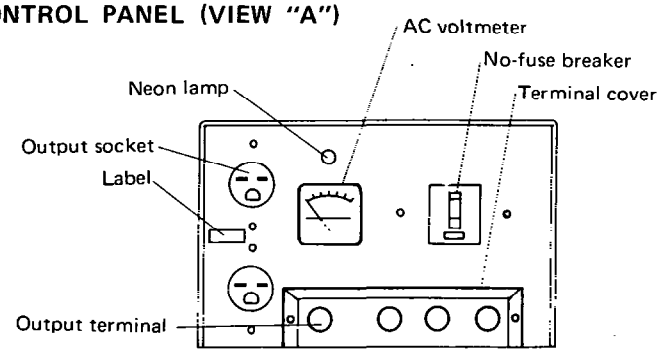
2-1. Model RGD551

EXTERNAL VIEW (1)

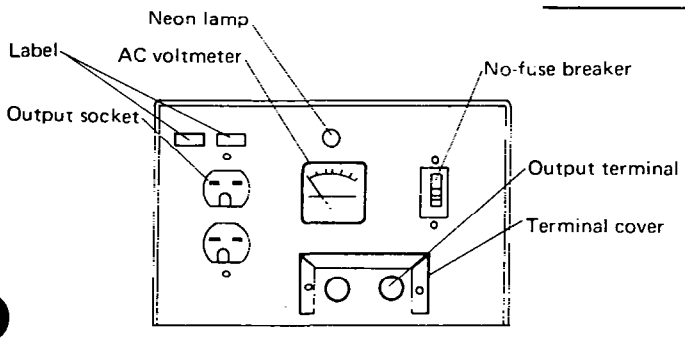




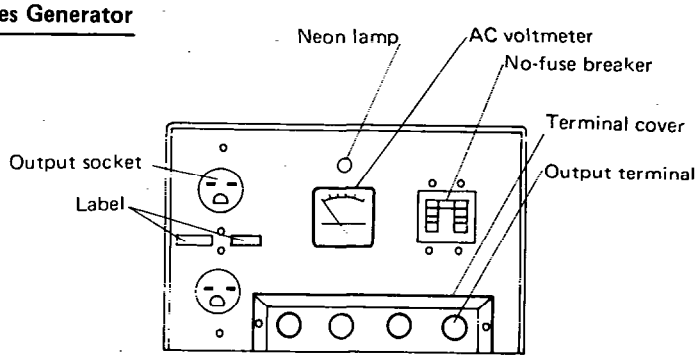
EXTERNAL VIEW (2) – CONTROL PANEL (VIEW "A")



For 3 phase, 4 wires Generator



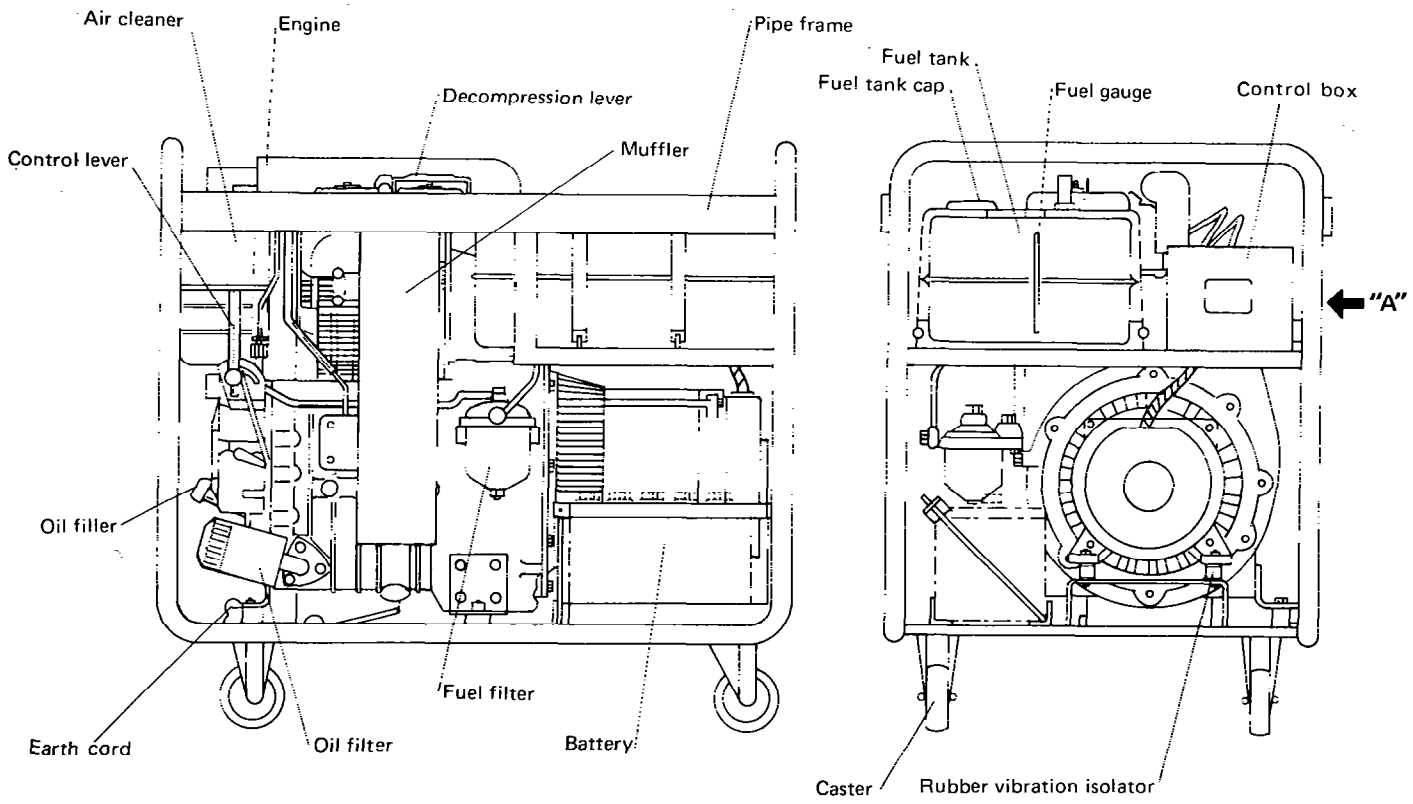
For single phase, 2 wires Generator



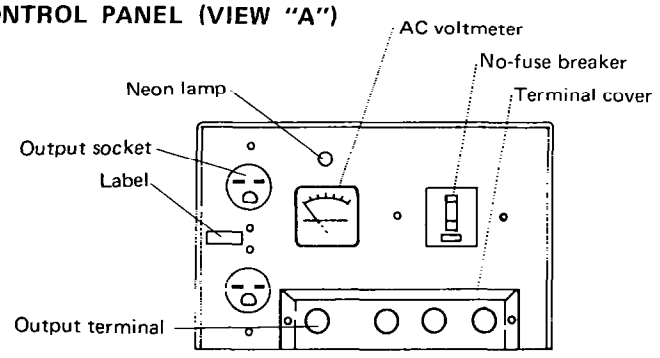
For single phase, 4 wires Generator

2-2 Model RGD1101

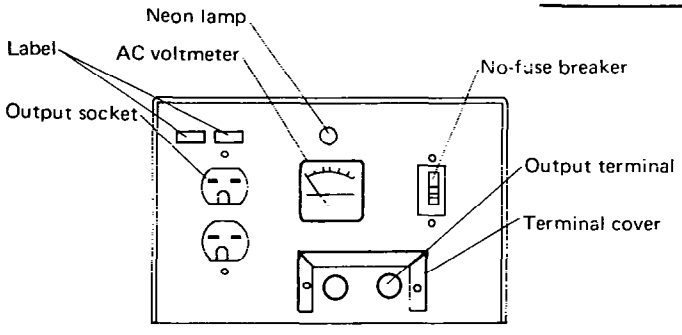
EXTERNAL VIEW (1)



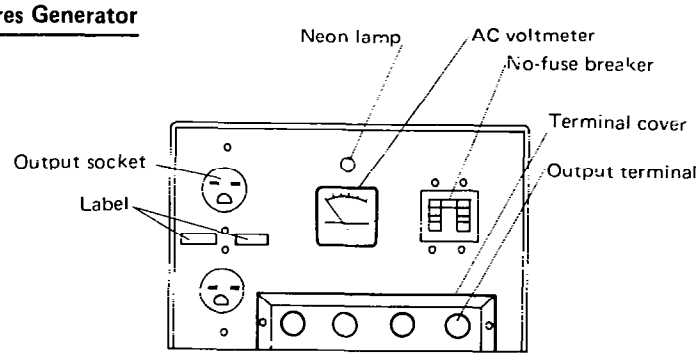
EXTERNAL VIEW (2) – CONTROL PANEL (VIEW "A")



For 3 phase, 4 wires Generator



For single phase, 2 wires Generator



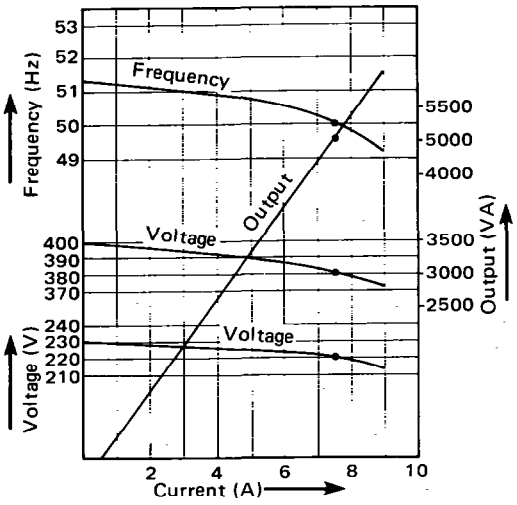
For single phase, 4 wires Generator

3. PERFORMANCE CURVES

3-1 Model RGD551

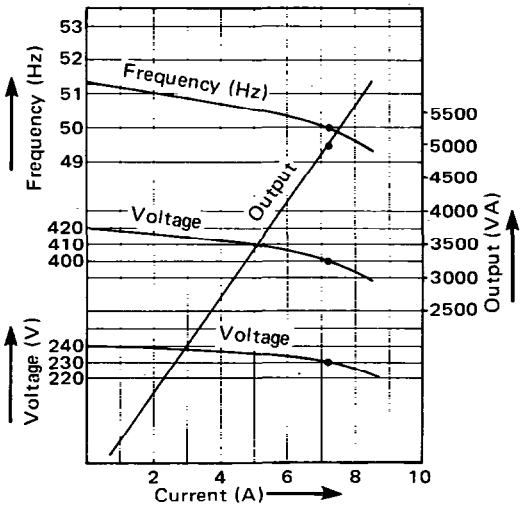
● **Self exciting, 2 pole, 3 phase, 4 wires**

Power Factor 80%
Engine DY40-A
Output Max 5500VA
Rated 5000VA
Frequency 50Hz
Voltage 220V/380V



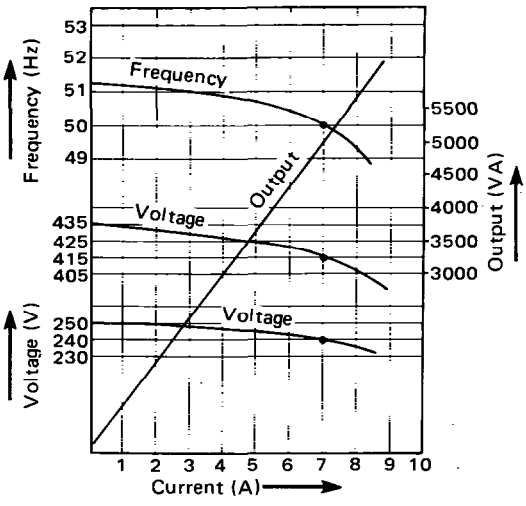
● **Self exciting, 2 pole, 3 phase, 4 wires**

Power Factor 80%
Engine DY40-A
Output Max 5500VA
Rated 5000VA
Frequency 50Hz
Voltage 230/400V



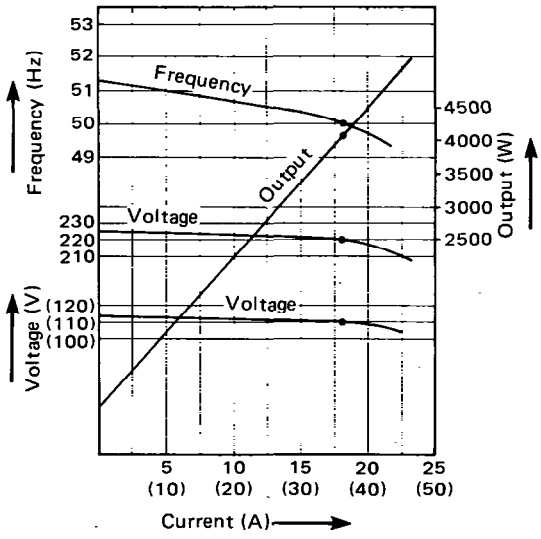
● **Self exciting, 2 pole, 3 phase, 4 wires**

Power Factor 80%
Engine DY40-A
Output Max 5500VA
Rated 5000VA
Frequency 50Hz
Voltage 240V/415V



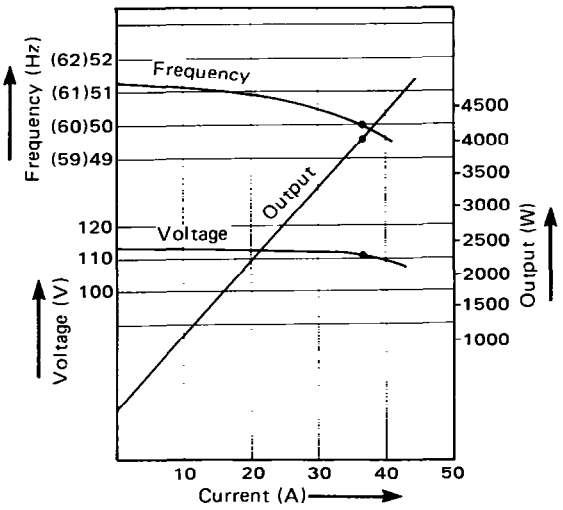
● **Self exciting, 2 pole, single phase, 4 wires**

Power Factor 100%
Engine DY40-A
Output Max 4500W
Rated 4000W
Frequency 50Hz
Voltage 110V/220V



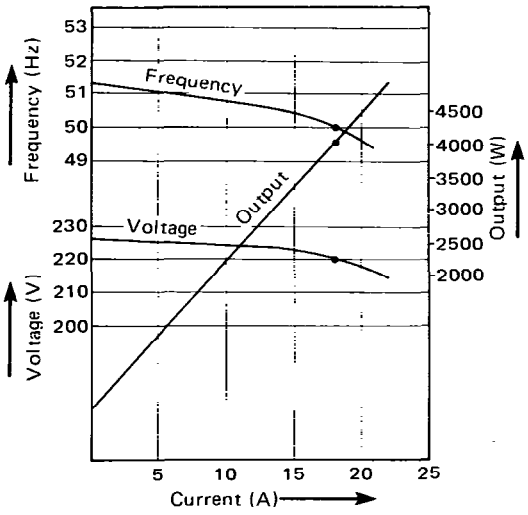
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY40-A
Output Max 4500W
Rated 4000W
Frequency 50Hz (60Hz)
Voltage 110V



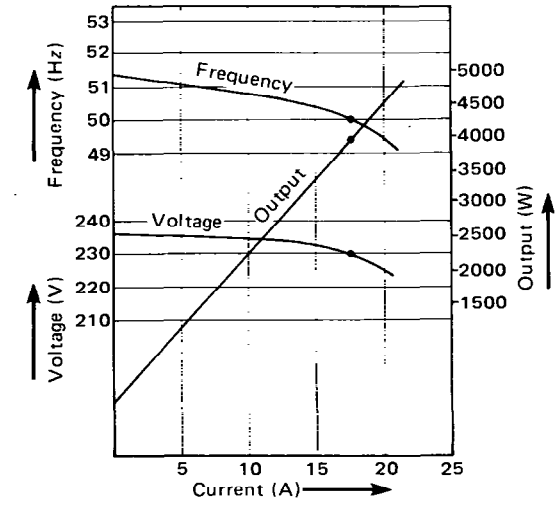
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY40-A
Output Max 4500W
Rated 4000W
Frequency 50Hz
Voltage 220V



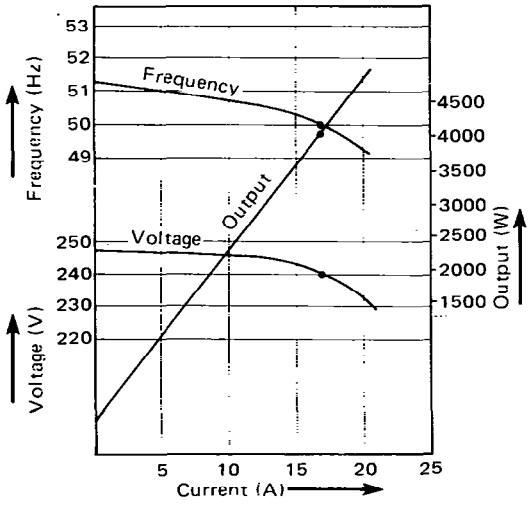
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY40-A
Output Max 4500W
Rated 4000W
Frequency 50Hz
Voltage 230V



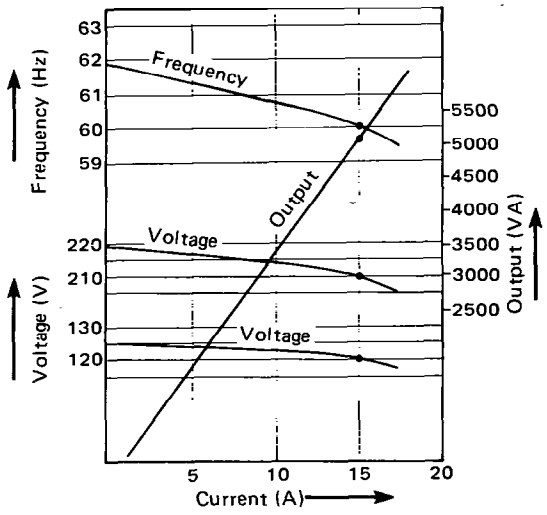
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY40-A
Output Max 4500W
Rated 4000W
Frequency 50Hz
Voltage 240V



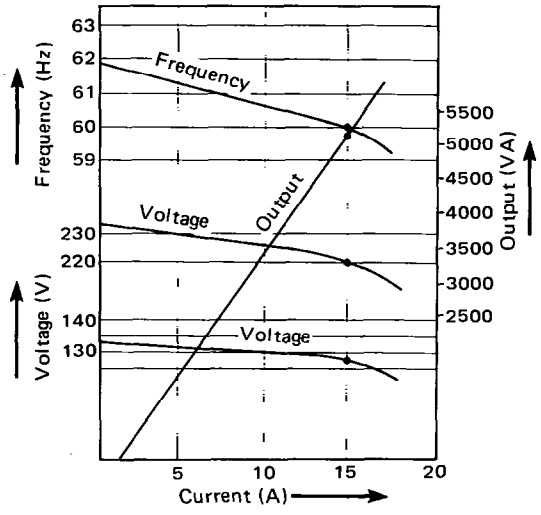
● **Self exciting, 2 pole, 3 phase, 4 wires**

Power Factor 80%
Engine DY40-A
Output Max 5500VA
Rated 5000VA
Frequency 60Hz
Voltage 120V/208V



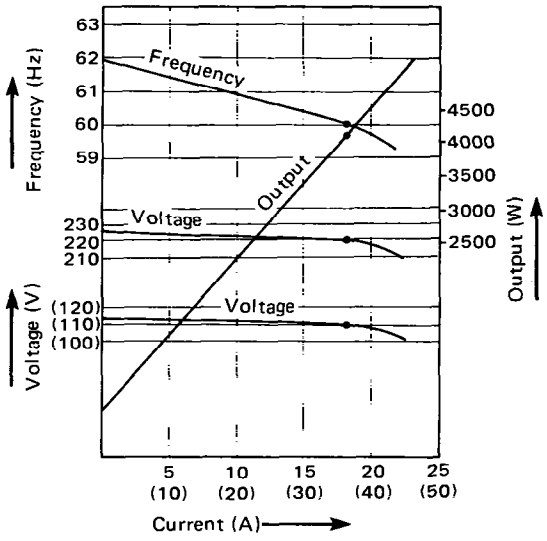
● **Self exciting, 2 pole, 3 phase, 4 wires**

Power Factor 80%
Engine DY40-A
Output Max 5500VA
Rated 5000VA
Frequency 60Hz
Voltage 127V/220V



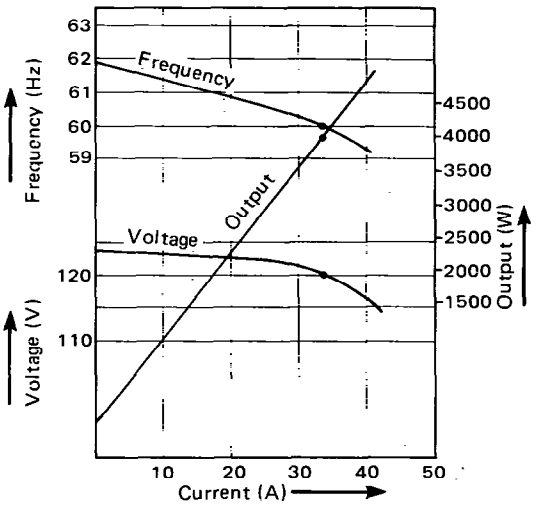
● **Self exciting, 2 pole, single phase, 4 wires**

Power Factor 100%
Engine DY40-A
Output Max 4500W
Rated 4000W
Frequency 60Hz
Voltage 110V/220V



● **Self exciting, 2 pole, single phase, 2 wires**

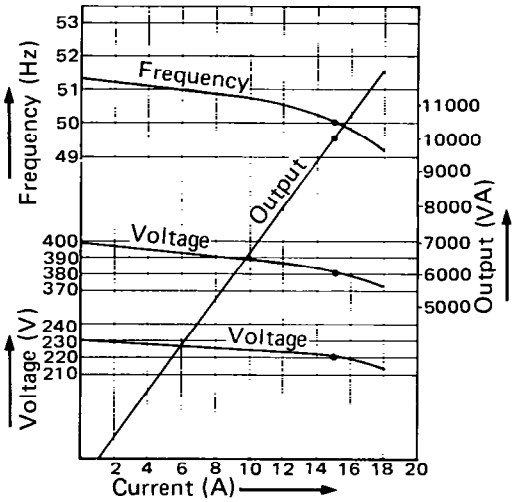
Power Factor 100%
Engine DY40-A
Output Max 4500W
Rated 4000W
Frequency 60Hz
Voltage 120V



3-2 Model RGD1101

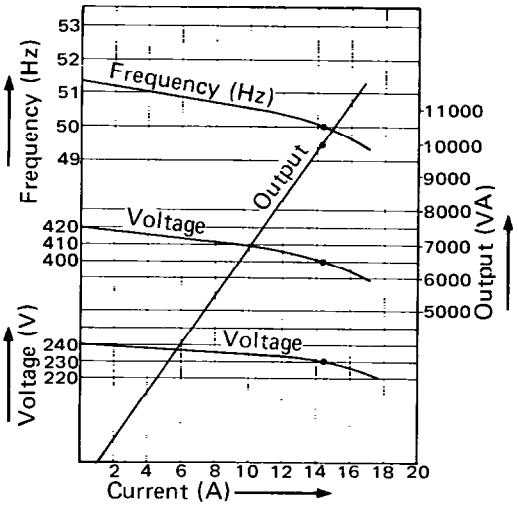
● Self exciting, 2 pole, 3 phase, 4 wires

Power Factor 80%
Engine DY80-2A
Output Max 11000VA
Rated 10000VA
Frequency 50Hz
Voltage 220V/380V



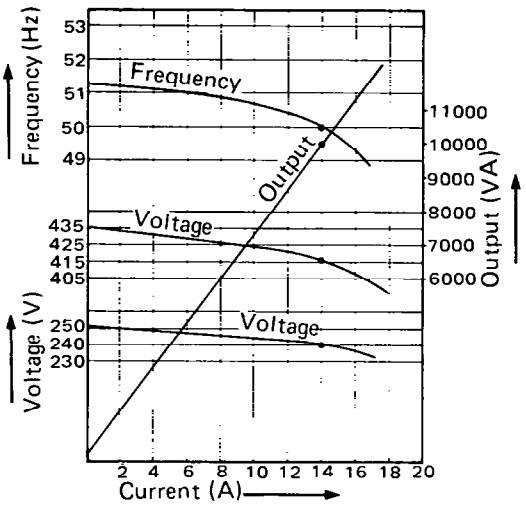
● Self exciting, 2 pole, 3 phase, 4 wires

Power Factor 80%
Engine DY80-2A
Output Max 11000VA
Rated 10000VA
Frequency 50Hz
Voltage 230/400V



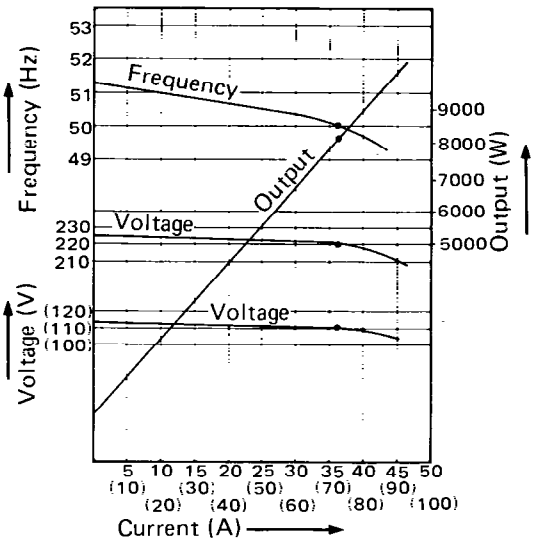
● Self exciting, 2 pole, 3 phase, 4 wires

Power Factor 80%
Engine DY80-2A
Output Max 11000VA
Rated 10000VA
Frequency 50Hz
Voltage 240V/415V



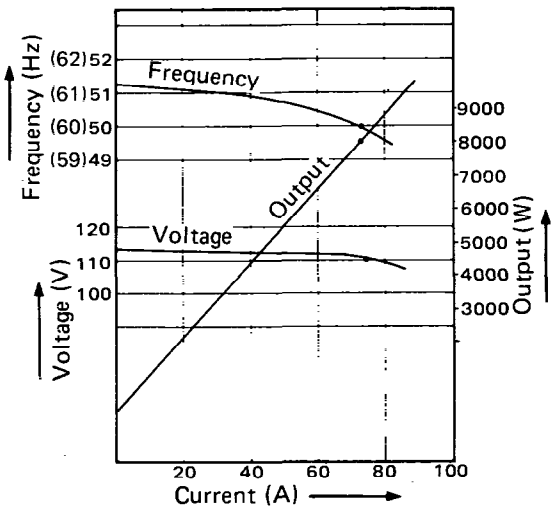
● Self exciting, 2 pole, single phase, 4 wires

Power Factor 100%
Engine DY80-2A
Output Max 9000W
Rated 8000W
Frequency 50Hz
Voltage 110V/220V



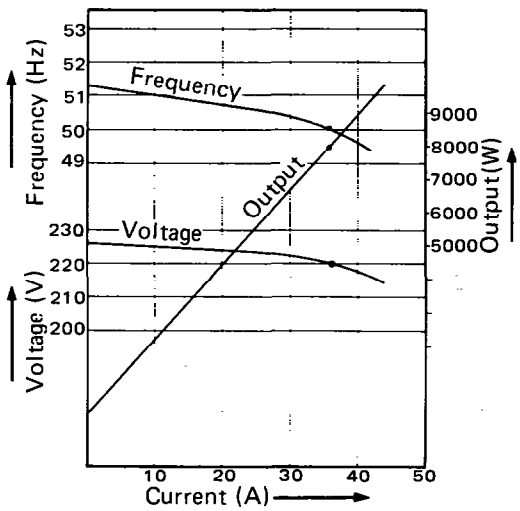
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY80-2A
Output Max 9000W
Rated 8000W
Frequency 50Hz (60Hz)
Voltage 110V



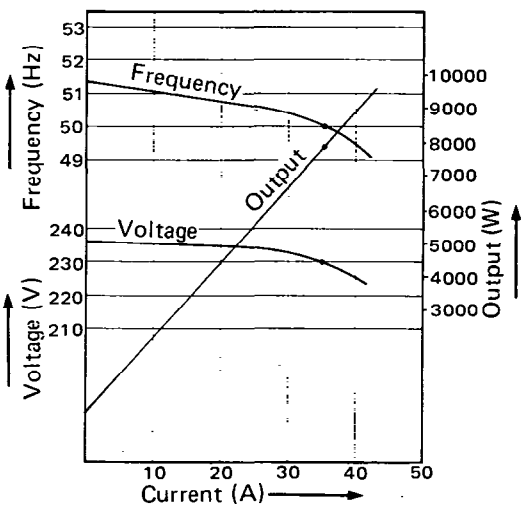
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY80-2A
Output Max 9000W
Rated 8000W
Frequency 50Hz
Voltage 220V



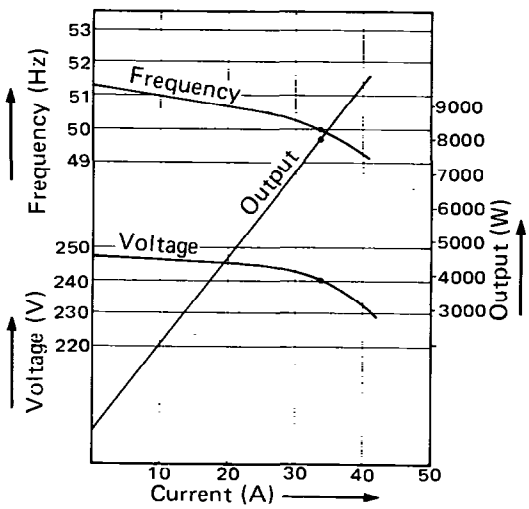
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY80-2A
Output Max 9000W
Rated 8000W
Frequency 50Hz
Voltage 230V



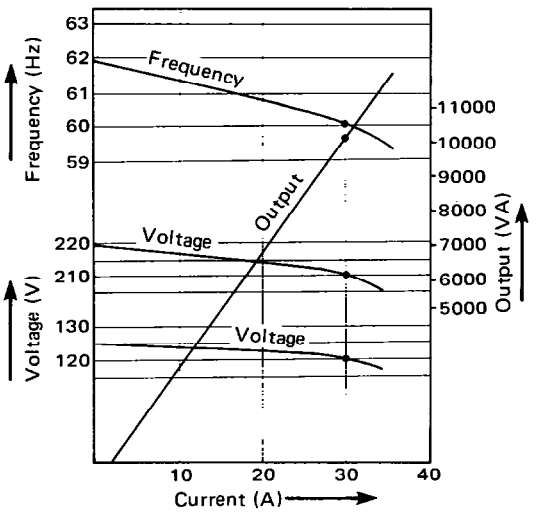
● **Self exciting, 2 pole, single phase, 2 wires**

Power Factor 100%
Engine DY80-2A
Output Max 9000W
Rated 8000W
Frequency 50Hz
Voltage 240V



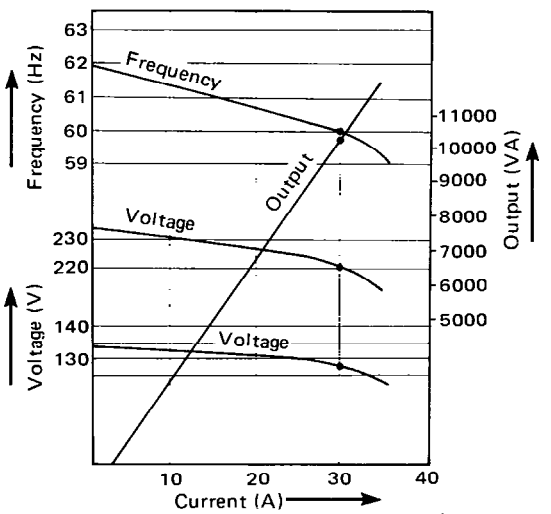
● Self exciting, 2 pole, 3 phase, 4 wire

Power Factor 80%
Engine DY80-2A
Output Max 11000VA
Rated 10000VA
Frequency 60Hz
Voltage 120V/208V



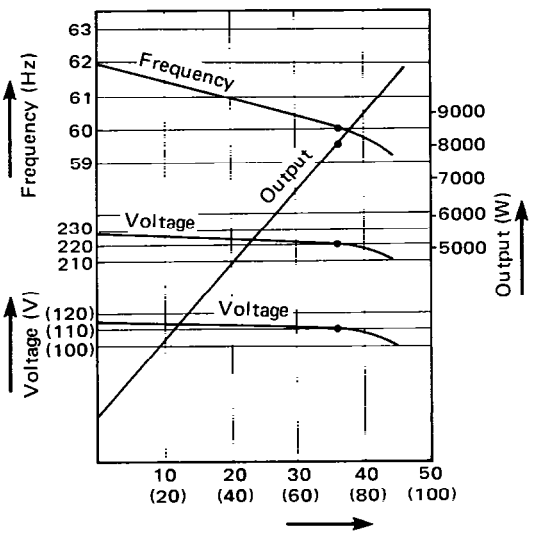
● Self exciting, 2 pole, 3 phase, 4 wires

Power Factor 80%
Engine DY80-2A
Output Max 11000VA
Rated 10000VA
Frequency 60Hz
Voltage 127V/220V



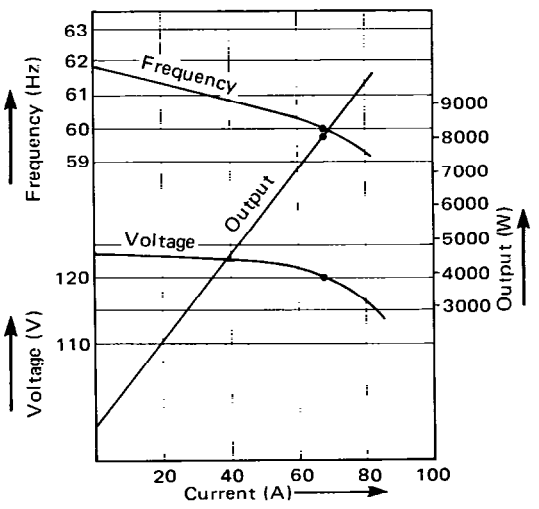
● Self exciting, 2 pole, single phase, 4 wires

Power Factor 100%
Engine DY80-2A
Output Max 9000W
Rated 8000W
Frequency 60Hz
Voltage 110V/220V



● Self exciting, 2 pole, single phase, 2 wires

Power Factor 100%
Engine DY80-2A
Output Max 9000W
Rated 8000W
Frequency 60Hz
Voltage 120V



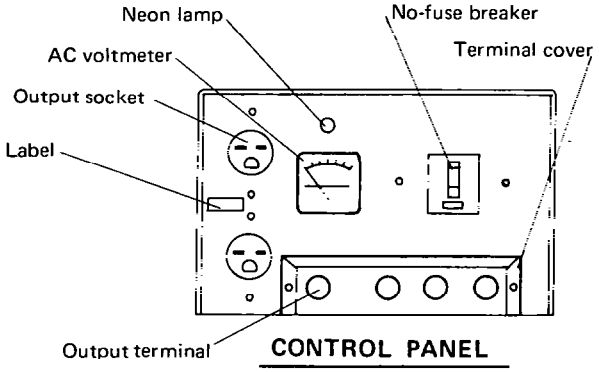
4. CONSTRUCTION

Outline

The Generator (RGD551 & RGD1101) consists of a stator, a control box and a fuel tank attached with bolts to a pipe frame. The stator has a stator cover, a rear cover and a front cover which is fixed with bolts to the engine. Inside the stator, a rotor is directly connected with coupling to the engine. The generator and the engine are installed in the pipe frame using rubber vibration isolators. The battery, which is available as an optional equipment for RGD551 and as a standard for RGD1101, is also installed in the pipe frame. (The fuel tank is secured with tank bands.)

(1) Control box

On the front panel of the control box are mounted an AC voltmeter, a neon lamp, a no-fuse breaker, output sockets and terminals, and a terminal cover. The inside of the control box is equipped with an automatic voltage regulator (AVR), or a current transformer (CT) and diode stack (SR).



CONTROL PANEL

(2) Generator

The stator is wound with the stator coils (output and auxiliary coils), which generate the electricity. Inside the rear cover, there is a holder to which the brush assembly (brushes, springs, brush plate, and lead wires) is attached, and the collar is sunk to receive the ball bearing.

The rotor assembly is supported by the collar which is situated inside the rear cover and by the flywheel which is on the engine side.

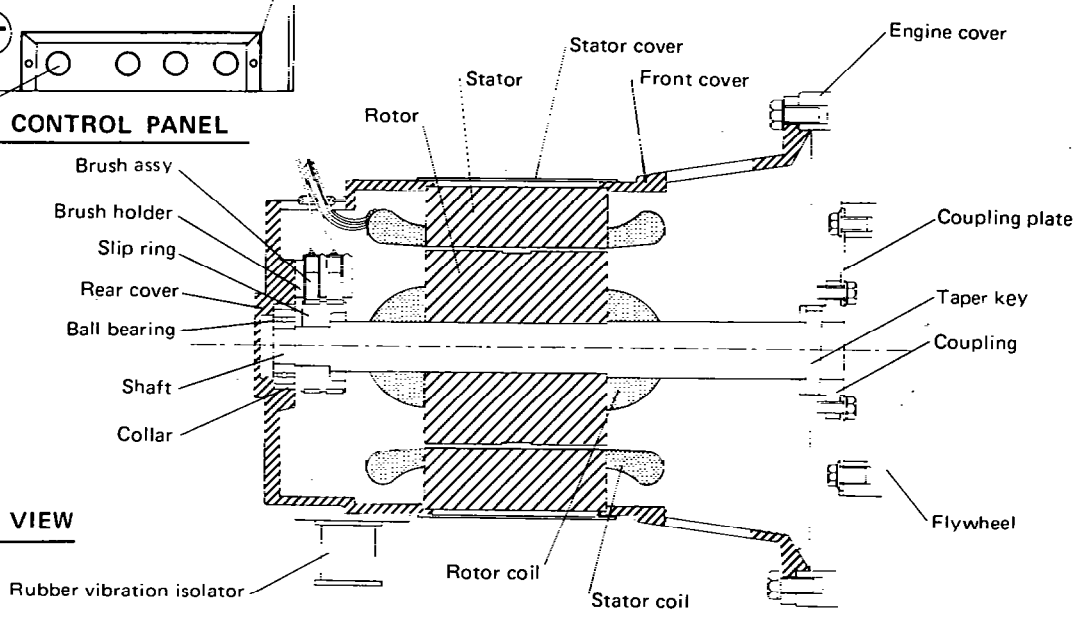
A 2-pole rotor coil for excitation is wound on the rotor and is directly coupled and secured with bolts to the engine flywheel with a coupling and coupling plate.

The generator is cooled by the engine's cooling fan.

(3) Connecting of load

The load is connected to the 2 output sockets and the 2 output terminals. Variations of the output voltage due to changes in the load are automatically controlled by the automatic voltage regulator (AVR) or the current transformer (CT). When overloads or short circuits occur, the no-fuse breaker (N.F.B.) will operate and cut-off the output voltage, thus protecting the generator.

The engine is started with the starting motor and stopped with the engine control lever.



SECTIONAL VIEW

Note

CT (Current transformer) ····· CT controls output voltage to maintain it at rated voltage.
SR (diode stack) ····· SR converts alternate current generated at secondary coil to direct current, and transfers it to rotor coil.
N.F.B. (No-fuse breaker) ····· When overloads or short circuits occur, the N.F.B. will operate to cut-off the output voltage.
AVR (Automatic voltage regulator) ····· AVR automatically controls output voltage when change in the load makes output voltage vary.

5. OPERATION

5-1 Single phase Generator

When the engine is started, the rotor assembly rotates and, as a result of the residual magnetism of the magnetic poles, a minute voltage is induced in the stator. This induced voltage passes through the AVR and excites the rotor coil; this increases the induced voltage which further increases the excitation until the induced voltage reaches the rated voltage. At this point the voltmeter will indicate the rated voltage. When the no-fuse breaker (N.F.B.) is thrown ON from OFF while generating, the neon lamp will light.

Should the speed change due to variations in the load, the terminal voltage will always be kept constant through the action of the AVR which increases or decreases the excitation.

5-2 Three phase Generator

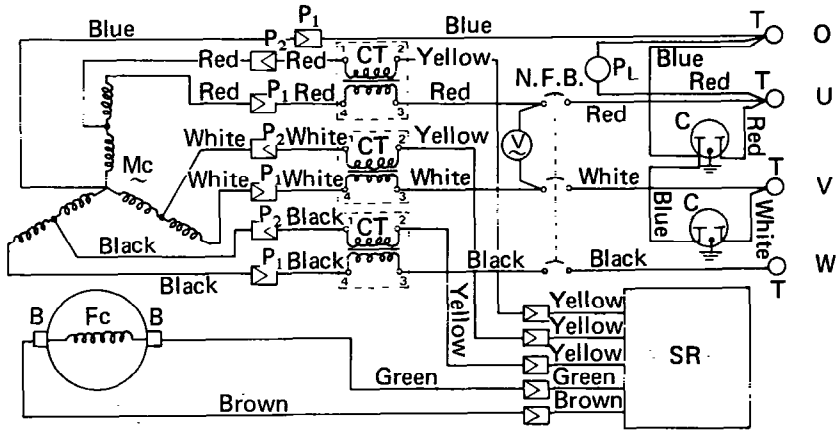
When the engine is started, the rotor assembly rotates and as a result of the residual magnetism of the magnetic poles, a minute voltage is induced in the stator. This induced voltage passes through the CT and SR to excite the rotor coil; this increases the induced voltage which further increases the excitation until the induced voltage reaches the rated voltage. At this point the voltmeter will indicate the rated voltage. When the no-fuse breaker is thrown ON from OFF while generating, the neon lamp will light.

Should the speed change due to variations in the load, the terminal voltage will always be kept constant through the action of the CT which increases or decreases the excitation.

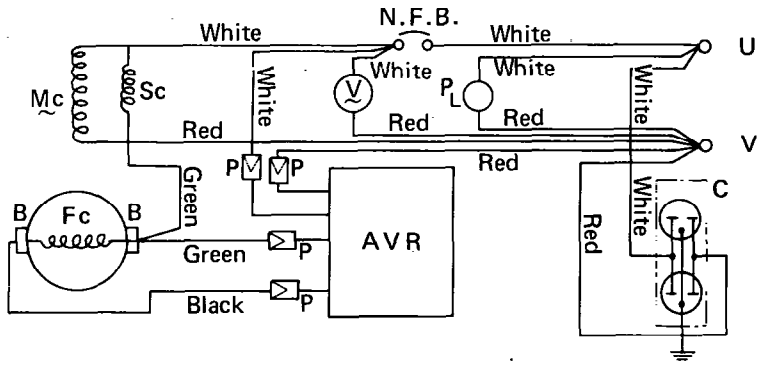
Since the induced voltage is proportional to the speed of the rotor, the voltage can be adjusted by controlling the speed.

6. WIRING DIAGRAM

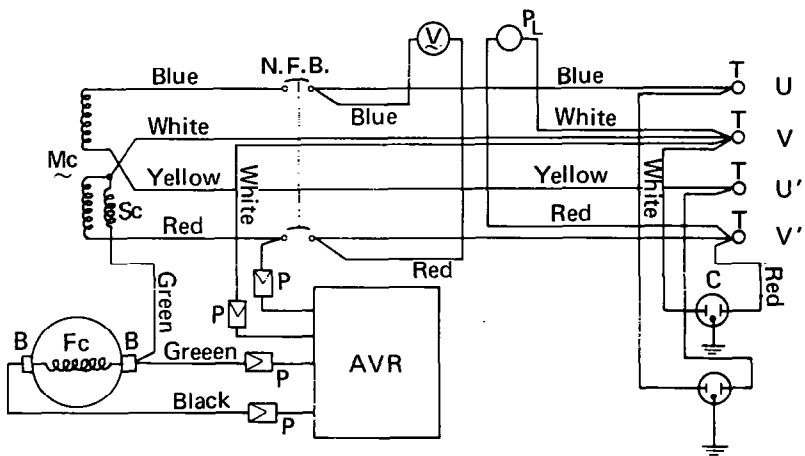
6-1 For 3 phase, 4 wires Generator



6-2 For single phase, 2 wires Generator



6-3 For single phase, 4 wires Generator



Symbols	Name of Parts	Symbols	Name of Parts
Mc	Stator coil (output)	C	AC output socket
Sc	Stator coil (auxiliary)	P	Plug-in pin terminal (red)
Fc	Rotor coil (excitation)	B	Brush
N.F.B.	No-fuse breaker	CT	Current transformer
AVR	Automatic voltage regulator	SR	Diode stack
V	AC voltmeter	T	Output terminal
P_L	Neon lamp	P_1	Plug-in pin terminal (blue)
U,V	AC output terminal	P_2	Plug-in pin terminal (red)

7. TROUBLE SHOOTING

Phenomenon	Cause	Remedy
1. Generator will not generate.	1. Disconnection or poor contact of plug-in pin terminals.	○ Repair or replace.
	2. Wear or poor contact of brushes.	○ Repair or replace.
	3. Break in the rotor coil circuit.	○ Replace.
	4. Break in the stator coil circuit.	○ Replace.
	5. Faulty AVR, CT or SR.	○ Replace.
	6. Distortion of slip ring.	○ Repair or replace.
	7. No residual magnetism.	○ Induce anew.
2. No-load voltage is normal, but rated load cannot be applied.	1. Faulty or poor contact of output terminals.	○ Repair or replace.
	2. Faulty insulation of coil windings.	○ Repair or replace.
	3. Faulty AVR, CT or SR.	○ Repair or replace.
	4. Poor contact of brushes.	○ Repair or replace.
	5. Low power output of engine.	○ Adjust or repair.
3. Generated voltage is greatly higher than rated voltage.	1. Erroneous wiring.	○ Correct.
	2. Faulty AVR or CT.	○ Replace.
	3. Over-speeding of engine.	○ Adjust.
4. Voltmeter needle will not move, or indication is faulty.	1. Faulty voltmeter.	○ Repair or replace.
	2. Faulty lead wire.	○ Replace.
5. Generator is generating, but neon lamp will not light.	1. Faulty neon lamp.	○ Replace.
	2. Faulty lead wire.	○ Replace.
	3. No-fuse breaker in wrong position.	○ Turn to ON.

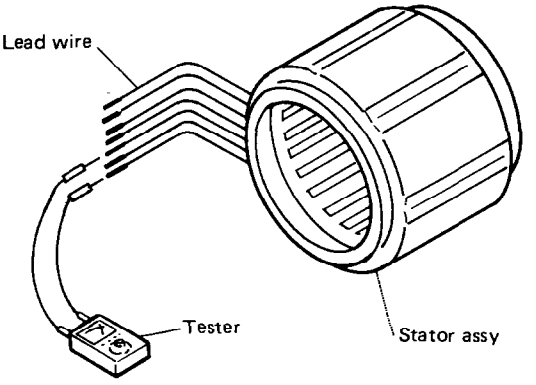
8. CHECKING FUNCTIONAL PARTS

8-1 Stator Assy

a. (3 phase) With the blue lead wire as the common lead, all lead wires are tested for continuity with a tester. If all lead wires show continuity: OK.

b. (Single phase, 2 wires) With the white lead wire as the common lead, the blue and red lead wires are tested for continuity with a tester. If these lead wires show continuity: OK.

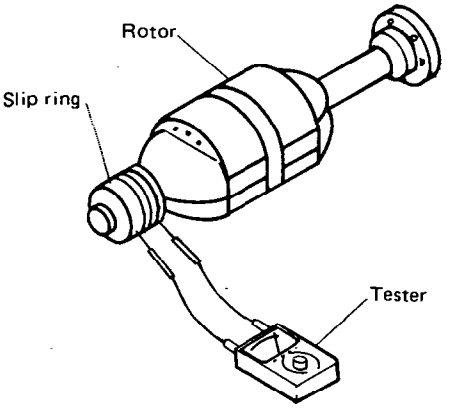
c. (Single phase, 4 wires) In addition to the above, the blue and yellow lead wires are tested for continuity. If all lead wires show continuity: OK.



8-2 Rotor Assy

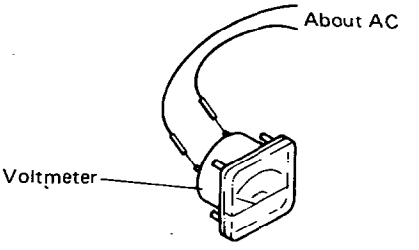
If there is continuity when a tester is applied to the two slip rings: OK.

(The resistance is 6 to 10 ohms for single phase, and 10 to 50 ohms for 3 phase.)



8-3 Voltmeter

Give an alternating current voltage to a terminal. If voltmeter shows the given voltage: OK



8-4 Neon Lamp

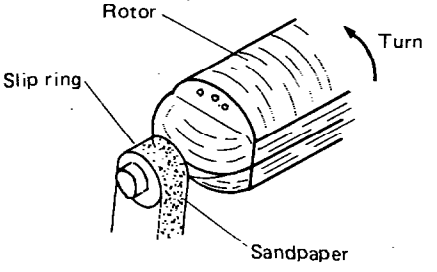
If the lamp lights when a voltage of about AC 100V is applied to the lamp terminals: OK.

8-5 Slip Rings

If the surface of the slip rings is uniformly bright: OK.

Slip rings showing black spots, excessive wear, or uneven wear should be repaired.

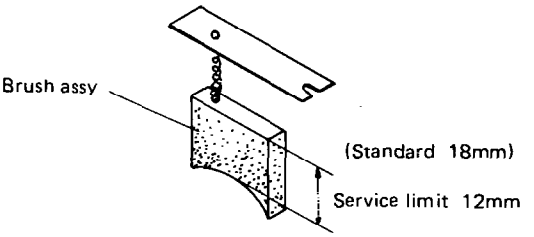
The slip ring should be polished with fine sandpaper, while turning the rotor, until the rough spots disappear. Care should be taken to prevent the sandpaper touching the rotor coils.



8-6 Brush Assy

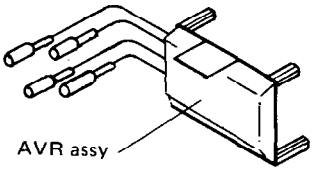
If the surface in contact with the slip ring is clean: OK. If this surface is rough, repair using fine sandpaper. (The surface of the slip ring will also be rough, so polish this with fine sandpaper also.)

Brushes should be replaced when worn to a height of 12mm from the contact surface.



8-7 AVR Assy (single phase)

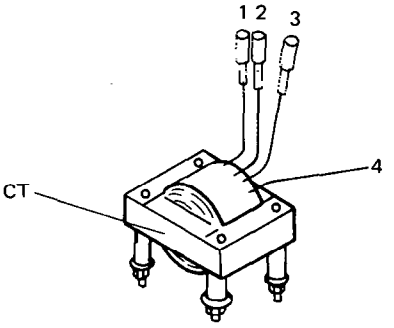
If the epoxy cover protecting the functional parts of the AVR is clean: OK. (The AVR is faulty if the cover is discoloured or burnt.)



8-8 CT Assy (3 phase)

When continuity is shown between terminals 1 and 2, and 3 and 4, with a tester: OK.

(The CT is faulty if continuity is shown between terminals 2 and 3.)



8-9 SR Assy

If no continuity is shown with a tester applied to any 2 lead wires of the 3 yellow lead wires: OK. Also, if continuity is shown for one only of the green or red lead wires: OK. (If both show continuity, the SR assembly is faulty.)

8-10 Injection of Residual Magnetism

The source of electric power of the generator is the minute electricity generated by the residual magnetism. Sometimes, after long disuse the residual magnetism may completely disappear, and will have to be newly injected. Also, when the rotor has been replaced, injection of residual magnetism will be necessary.

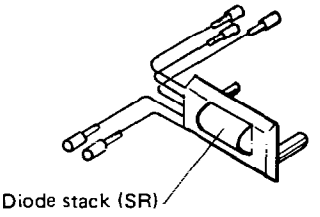
Methods for inducing residual magnetism.

(a) 3 phase Generator

(1) When a battery is available.

Remove the cover of the control box and disconnect the two lead wires, green and brown, from the pin terminals connecting the generator body and the SR. Then residual magnetism can be induced by passing a current from the battery through the rotor coil lead wires (the lead wires coming from the generator body), for about 1 or 2 seconds, so that the green lead wire is connected to (+) and the brown lead wire to (−) of the battery.

After induction is finished, restore the wiring to its former state. *Use a battery of 12 to 48V.*



(2) When an AC power line is available.

While operating the generator, apply the AC power line to the generator terminals through a series resistance of from 10 to 50 ohms, and disconnect the AC power line as soon as the voltmeter deflects.

Use an AC power line near the rated voltage of the generator.

(b) Single Phase Generator

(1) When a battery is available.

Remove the cover of the control box, and disconnect the two lead wires, black and green, connecting the generator body and AVR from the pin terminals. Then residual magnetism can be induced by connecting the battery to the lead wires from the generator body for about 1 to 2 seconds, so that the green lead wire is connected to (+) and the black lead wire to (−) of the battery.

After induction is finished, restore the wiring to its former state.

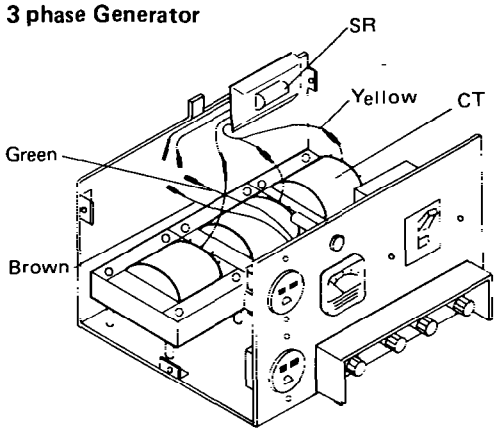
Use a battery of 12 to 48V.

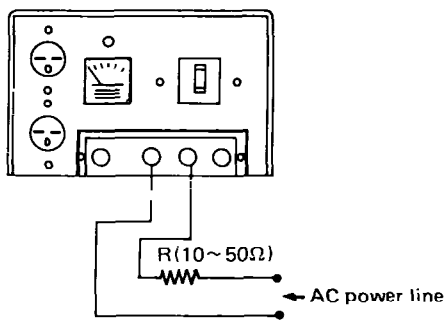
(2) When an AC power line is available.

While operating the generator, apply the AC power line to the output socket of the generator through a series resistance of 10 to 50 ohms, and disconnect the AC power line as soon as the voltmeter deflects.

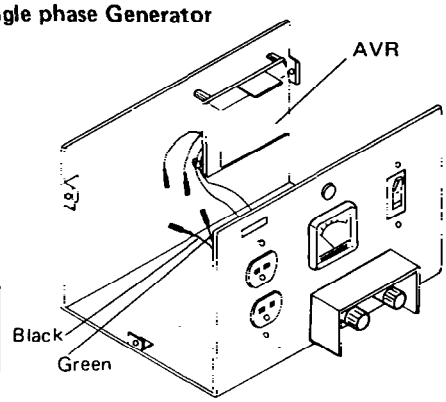
Use an AC power line near the rated voltage of the generator.

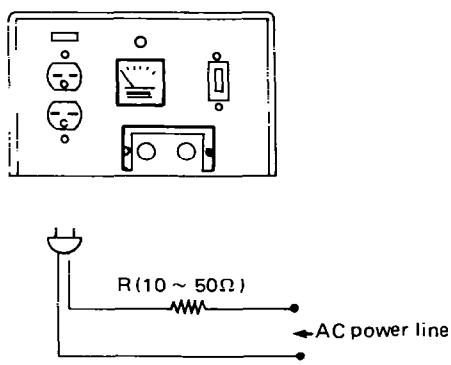
3 phase Generator





Single phase Generator





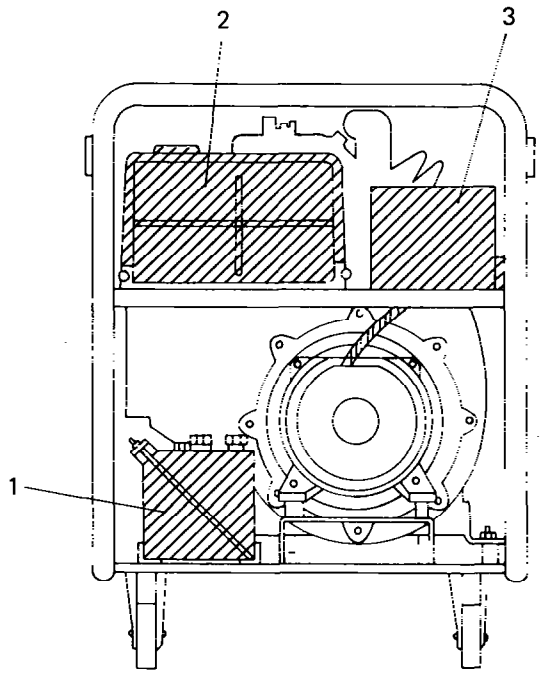
CAUTION: REFER TO THE FOLLOWING TABLE FOR RELATION OF VOLTAGE AND RESISTANCE R. DO NOT EXCEED A SECOND FOR EXCITING.

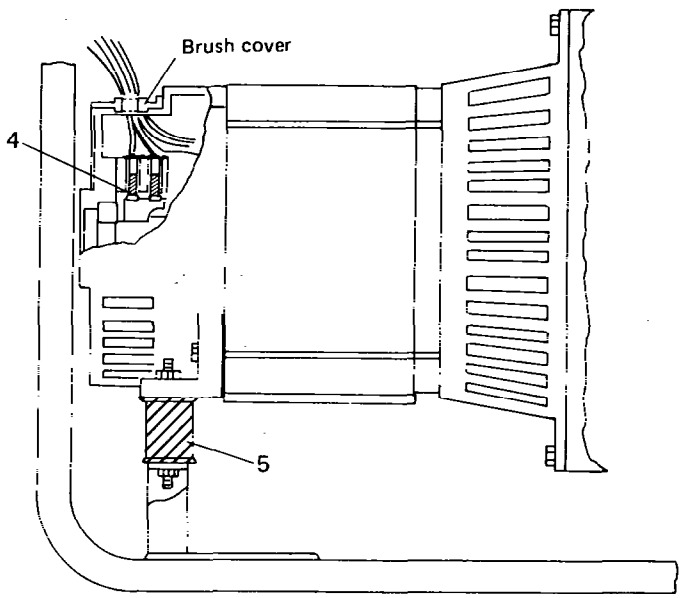
VOLTAGE	RESISTANCE R
100~120V	10Ω
200~240V	20Ω
360~450V	40Ω

9. DISASSEMBLING AND REASSEMBLING

COMPONENT	DISASSEMBLING PROCEDURE	DISASSEMBLED PART
1. Battery	1) Disconnect battery cords from (+) and (−) terminals.	
	2) Remove nuts from battery fitting bracket.	Nut M6 – 2 ea. Spring washer M6 – 2 ea. Washer M6 – 2 ea.
	3) Remove battery fitting bracket.	Battery fitting bracket – 1 ea. Battery fitting bolt – 2 ea.
	4) Demount battery from frame.	Battery – 1 ea.
2. Fuel tank	1) Drain fuel. (Fuel tank capacity = 24 ℓ)	
	2) Disconnect fuel pipe from upper part of fuel tank by hand, and fuel pipe from lower part by loosening banjo bolt.	Banjo bolt – 1 ea. Gasket – 2 ea.
	3) Remove nuts and screws from fuel tank bands that secure fuel tank.	Nut M6 – 8 ea. Band clip – 4 ea. Screw M6 x 3 – 4 ea.
	4) Remove fuel tank bands.	Fuel tank band assy – 2 ea.
	5) Demount fuel tank from frame.	Fuel tank – 1 ea.
3. Control box	1) Remove bolts from control box cover.	Bolt M4 x 10 – 6 ea. Spring washer M4 – 6 ea.
	2) Remove control box cover.	Control box cover – 1 ea.
	3) Disconnect lead wires extending out of yoke. * The number and color of wires are different between 3 phase units and single phase units. Wires are also connected to different connectors.	For 3 phase units only Screw M4 x 10 – 3 ea. Washer M4 – 3 ea. Nut M4 – 3 ea.
	4) Remove bolts and nuts that fasten control box to frame.	Bolt M5 x 30 – 4 ea. Nut M5 – 4 ea. Spring washer M5 – 4 ea.
	5) Demount control box from frame.	Control box – 1 ea.

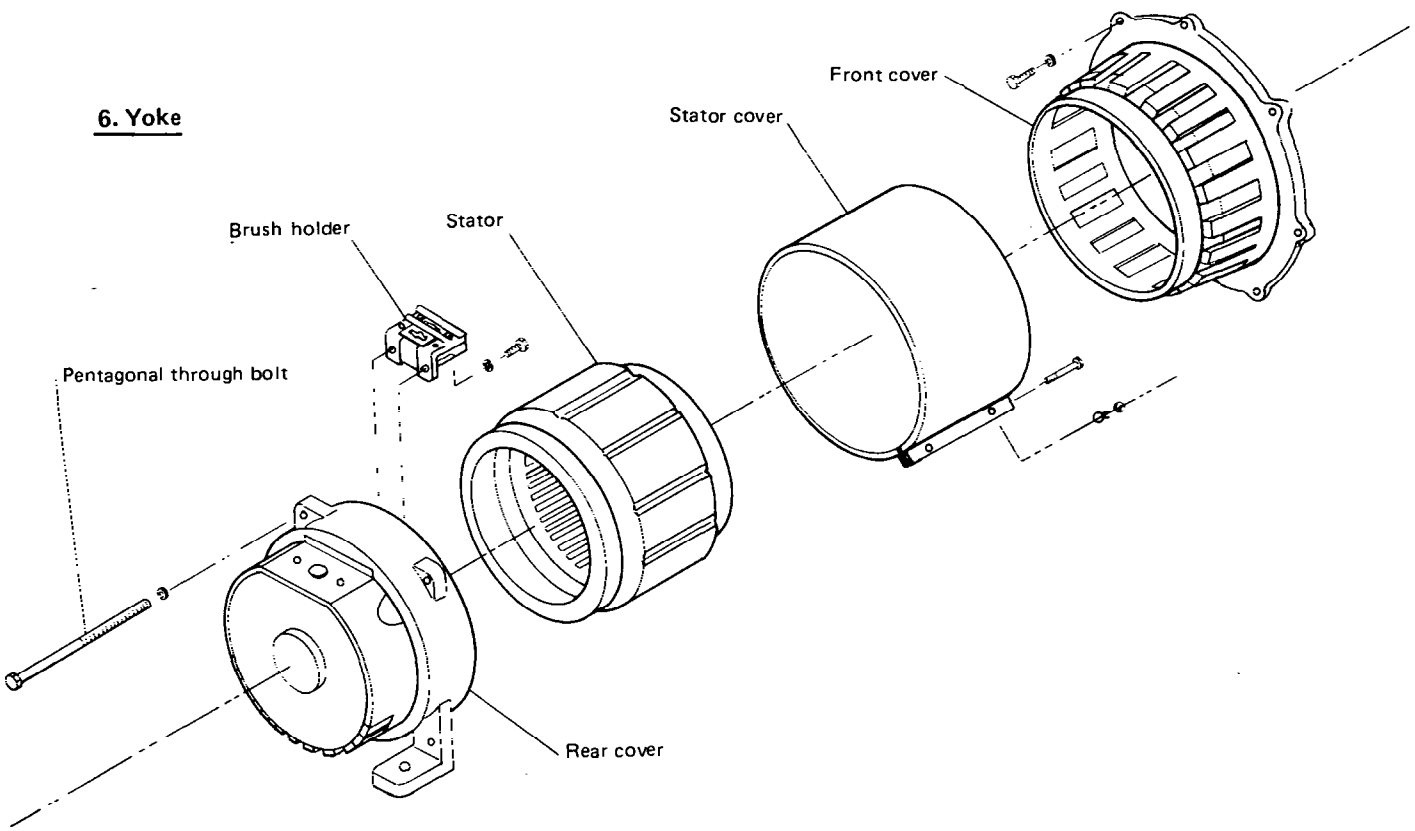
COMPONENT	DISASSEMBLING PROCEDURE	DISASSEMBLED PART
4. Brush assy	1) Remove bolts that fasten brush cover.	Bolt M5 x 10 – 2 ea.
	2) Remove brush cover. * When separating lead wires from brush cover, separate them one by one in order of thickness.	Brush cover – 1 ea.
	3) Loosen nuts that fasten brush assy. * Use caution not to remove nuts.	Nut M4 – 2 ea.
	4) Remove brush assy.	Brush assy – 2 ea.
5. Rubber vibration isolator (Battery cord (–))	1) Remove nuts from top and bottom of rubber vibration isolator underneath yoke.	Nut M8 – 4 ea. Spring washer M8 – 4 ea. Washer M8 – 2 ea.
	2) Remove nuts from top of rubber vibration isolator underneath engine.	Nut M8 – 4 ea. Spring washer M8 – 4 ea. Washer M8 – 4 ea.
	3) Disconnect (–) battery cord.	
	4) Lifting up yoke, remove rubber vibration isolator.	Rubber vibration isolator – 2 ea.





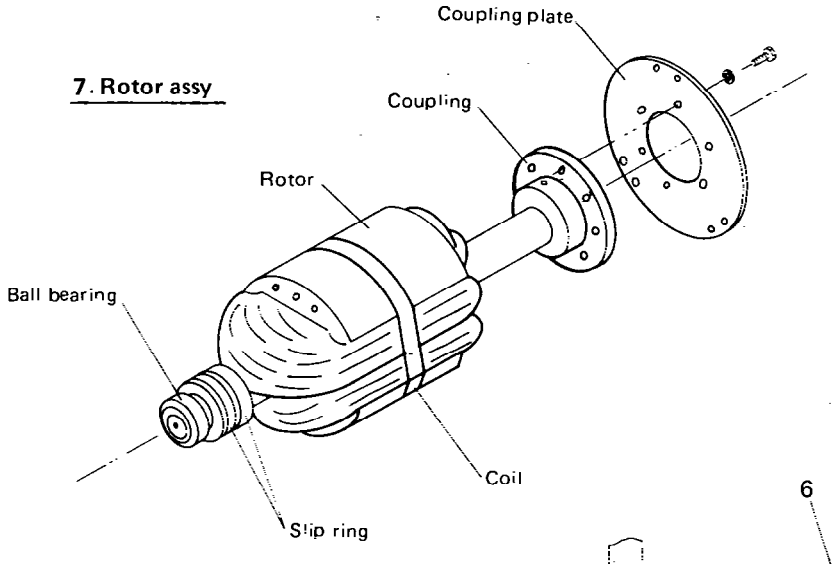
COMPONENT	DISASSEMBLING PROCEDURE	DISASSEMBLED PART
6. Yoke, Stator Front cover, Rear cover, Stator cover, Brush holder	1) Remove bolts that fasten front cover to engine.	Bolt M10 x 25, P = 1.25 – 8 ea. Spring washer M10 – 8 ea.
	2) Separate yoke from engine. * Use caution not to damage slip ring of rotor.	
	3) Remove pentagonal through bolts that fasten front cover and rear cover to stator.	Pentagonal through bolt M8 –4 ea. Spring washer M8 – 4 ea.
	4) Remove stator cover fastening screws.	Screw M4 x 25 – 2 ea. Spring washer M4 – 2 ea. Washer M4 – 2 ea. Nut M4 – 2 ea.
	5) Remove stator cover.	Stator cover – 1 ea.
	6) Remove front cover and rear cover from stator.	Stator – 1 ea. Front cover – 1 ea. Rear cover – 1 ea.
	7) Remove brush holder fastening screws from rear cover.	Screw M5 x 20 – 2 ea. Spring washer M5 – 2 ea.
	8) Remove brush holder.	Brush holder assy – 1 ea.

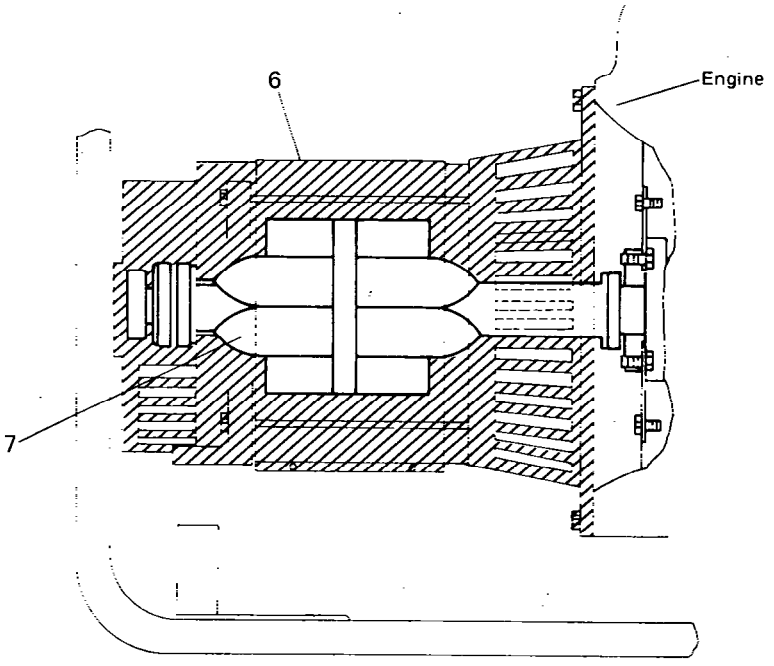
6. Yoke



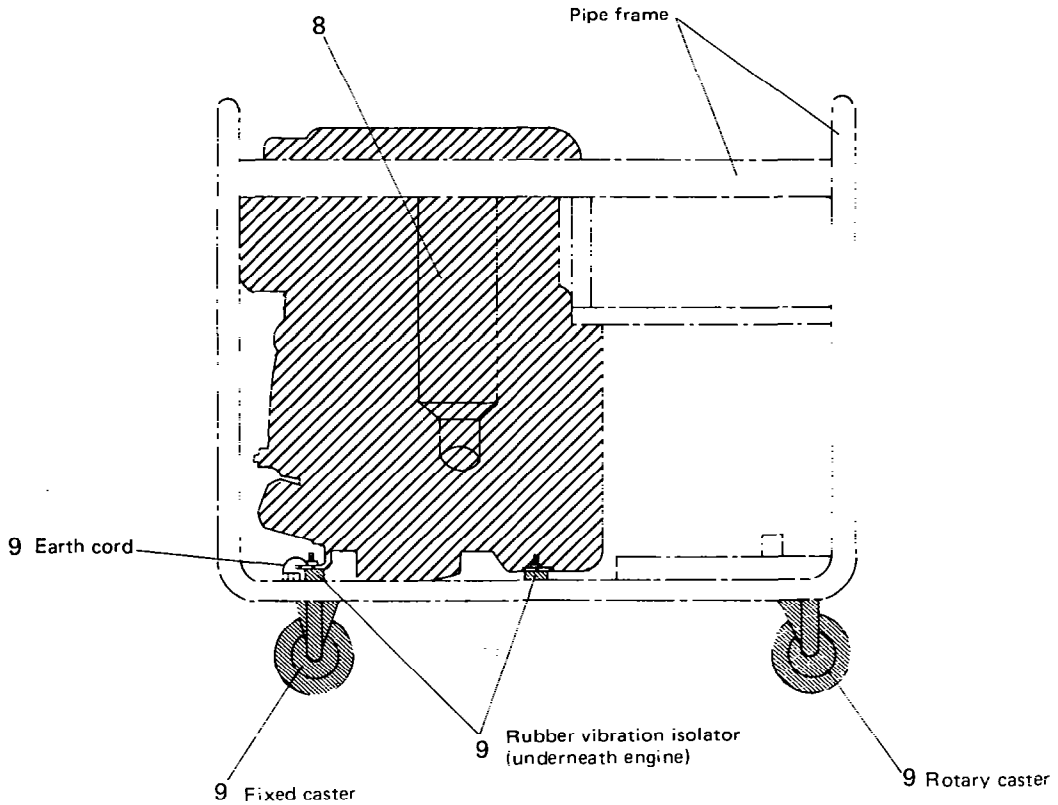
COMPONENT	DISASSEMBLING PROCEDURE	DISASSEMBLED PART
7. Rotor assy, Coupling plate	1) Remove bolts that fasten coupling plate to flywheel.	Bolt M8 x 20 – 6 ea. Spring washer M8 – 6 ea. Washer M8 – 6 ea.
	2) Remove rotor assy. * When placing rotor assy after removing, use caution not to damage slip ring and coil.	Rotor assy – 1 ea.
	3) Remove bolts that fasten coupling plate to coupling.	Bolt M8 x 20 – 6 ea. Spring washer M8 –6 ea. Washer M8 – 6 ea.
	4) Separate coupling plate from coupling.	Coupling plate – 1 set (3 pcs.) ea. Rotor – 1 ea.

7. Rotor assy





COMPONENT	DISASSEMBLING PROCEDURE	DISASSEMBLED PART
8. Engine	1) Demount engine from frame. * When demounting engine, use firm tools like a chain block.	Engine – 1 ea. (Frame) – 1 ea.
9. Rubber vibration isolator, Caster, Earth cord	1) Remove bolts and nuts that fasten rubber vibration isolator and casters to frame.	For casters Bolt M8 x 25 – 14 ea. Screw M8 x 25 – 2 ea. Nut M8 – 16 ea. Spring washer M8 – 16 ea. Washer M8 – 16 ea. For rubber vibration isolator Nut M8 – 4 ea. Spring washer M8 – 4 ea.
	2) Remove rubber vibration isolator, casters and earth cord. * A unit has 2 front fixed casters and 2 rear rotary casters.	Rubber vibration isolator – 2 ea. Caster – 4 ea. Earth cord – 1 ea.



○ To reassemble generator, make the disassembling procedures in the reverse sequence.

○ When disassembling and reassembling, please refer to Parts Catalog.

10. SAFETY PRECAUTIONS

(1) Never place inflammable objects near the generator

- Avoid placing light oil, matches, oily rags and other inflammable objects near the generator.

(2) Place of operation

- Attention should be paid to ventilation and fire hazards, and very dusty and damp places should be avoided as far as possible.

(3) Never operate in closed rooms

- When working in closed rooms, tunnels, manholes, etc, the generator should be operated outside and the power be brought in by cables.
  (When operation in confined places cannot be avoided, since carbon monoxide and other poisonous gases may gather and be dangerous, adequate ventilation should be provided to prevent exhaust gases from accumulating.)

(4) Replenishing of fuel oil

- The engine should always be stopped when replenishing the fuel oil.

(5) Never operate the generator with wet hands

- Never operate the generator with wet hands, since there is the danger of receiving an electric shock. (Also, avoid touching the generator when wet from rain or sea water.)

(6) Storage

- Store in a dry room, and cover the generator to prevent the accumulation of dust.

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